General

Title

Distal symmetric polyneuropathy (DSP): percentage of patients age 18 years and older with a diagnosis of DSP who had their neuropathic symptoms and signs reviewed and documented at the initial evaluation for DSP.

Source(s)

American Academy of Neurology (AAN). Distal symmetric polyneuropathy: performance measurement set. St. Paul (MN): American Academy of Neurology (AAN); 2012 May 30. 40 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients age 18 years and older with a diagnosis of distal symmetric polyneuropathy (DSP) who had their neuropathic symptoms and signs reviewed and documented at the initial evaluation for DSP.

Rationale

Appropriate diagnosis of distal symmetric polyneuropathy (DSP) can lead to improved patient outcomes and can prevent complications (i.e., neuropathic pain). The accurate criteria for the diagnosis of DSP in debatable. The exact criteria for diagnosis are needed to aid clinicians in the diagnosis of DSP.

Distal symmetric polyneuropathy can be asymptomatic in its early stages. Asymptomatic detection is more likely when dyskinesia or paresthesias are lacking or when only motor deficits are the presenting factors. There are many signs that need to be examined including primary sensory modalities, examining

for sensory motor loss, and examining for motor signs (England et al., 2005).

Neuropathy is often misdiagnosed or not diagnosed at all due to a misunderstanding or lack of presentation of symptoms; it can be mistaken for another condition. This leads to a delay in treatment or no treatment at all for those afflicted by the condition (The Neuropathy Association, 2010).

Correct diagnosis may reduce hospitalizations for neuropathic complications, lower morbidity in females, slow or control the progression of neuropathy in diabetics, and reduce variability in symmetric diabetic polyneuropathy prevalence data. Peripheral neuropathy has not been adequately recognized. It is often misdiagnosed or erroneously associated as the side effect of another disease like kidney failure (The Neuropathy Association, 2010).

DSP is one of the most common neurological complications of HIV/AIDS and its treatment (So et al., 1988).

Clinicians caring for patients with HIV infection need recognize the importance in becoming familiar with the diagnosis and treatment of DSP (Onwuegbuzie et al., 2009), as this may provide significant improvement in the quality of life in these patients.

The following evidence statements are quoted verbatim from the referenced clinical guidelines:

> Symptoms alone have relatively poor diagnostic accuracy in predicting the presence of polyneuropathy. Multiple neuropathic symptoms are more accurate than single symptoms and should be weighted more heavily (England et al., 2005).
> Signs are better predictors of polyneuropathy than symptoms and should be weighted more heavily (England et al., 2005).
> A single abnormality upon examination is less sensitive than multiple abnormalities in predicting the presence of polyneuropathy; therefore, an examination for polyneuropathy should look for a combination of signs (England et al., 2005).
> Relatively simple examinations are as accurate in diagnosing polyneuropathy as complex scoring systems; therefore, the case definition can use simple examinations without compromising accuracy (England et al., 2005).
> The combination of neuropathic symptoms, signs, and abnormal electrodiagnostic studies provides the most accurate diagnosis of distal symmetric polyneuropathy (England et al., 2005).

Evidence for Rationale

American Academy of Neurology (AAN). Distal symmetric polyneuropathy: performance measurement set. St. Paul (MN): American Academy of Neurology (AAN); 2012 May 30. 40 p.

England JD, Gronseth GS, Franklin G, Miller RG, Asbury AK, Carter GT, Cohen JA, Fisher MA, Howard JF, Kinsella LJ, Latov N, Lewis RA, Low PA, Sumner AJ, American Academy of Neurology, American Association of Electrodiagnostic Medicine, American Academy of Physical Medicine and Rehabilitation. Distal symmetric polyneuropathy: a definition for clinical research: report of the American Academy of Neurology, the American Association of Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation. Neurology. 2005 Jan 25;64(2):199-207. PubMed

Onwuegbuzie G, Ogunniyi A, Isamade E, Odoko J. Prevalence of distal symmetrical polyneuropathy among drug naÃ¯ve HIV/AIDS patients in Jos, Nigeria. Afr J Neurol Sci. 2009 Dec;28(2)

So YT, Holtzman DM, Abrams DI, Olney RK. Peripheral neuropathy associated with acquired immunodeficiency syndrome. Prevalence and clinical features from a population-based survey. Arch Neurol. 1988 Sep;45(9):945-8. PubMed

The Neuropathy Association. About peripheral neuropathy: facts. [internet]. [accessed 2010 Dec 17].

Primary Health Components

Distal symmetric polyneuropathy (DSP); diagnosis criteria; neuropathic symptoms and signs

Denominator Description

All patients age 18 years and older with a diagnosis of distal symmetric polyneuropathy (DSP) (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Patients who had their neuropathic symptoms and signs reviewed and documented at the initial evaluation for distal symmetric polyneuropathy (DSP) (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Importance of Topic

Prevalence and Incidence

DSP is the most common variety of neuropathy and a type of diabetic neuropathy (Ziegler, 2008; England et al., 2009).
Peripheral neuropathy is estimated to affect more than 20 million Americans (The Neuropathy Association, 2010). The overall prevalence is approximately 2,400 (2.4%) per 100,000 population, but in individuals older than 55 years, the prevalence rises to approximately 8,000 (8%) per 100,000 (Martyn & Hughes, 1997; England & Asbury, 2004). Older people are among the top spenders on healthcare. They make up 13% of the U.S. population in 2002, yet they consumed 63% of health care expenses (Shaw et al., 2003). Improving the effectiveness of diagnosis and optimizing patient outcomes will become increasingly important as the population of the United States ages.
Neuropathies affect up to 50% of patients with diabetes (Lin & Quan, 2010). DSP affects at least one in four diabetic patients (Ziegler, 2008). Diabetes is one of the five major chronic conditions that affect 25% of the U.S. community population (Stanton, 2006) and amounted to more than $62.3 billion health care costs in 1996 (Druss et al., 2001).
The incidence of DSP is 2% per year (Shaw et al., 2003).

Mortality and Morbidity

Neuropathies also cause great morbidity because the symptoms severely decrease patients' quality

of life. The secondary complications of neuropathy such as falls, foot ulcers, cardiac arrhythmias, and ileus are significant and can lead to fractures, amputations, and even death in patients with diabetes (Lin & Quan, 2010).

Pain associated with diabetic neuropathy exerts a substantial impact on the quality of life, particularly by causing considerable interference in sleep and enjoyment of life (Galer, Gianas, & Jensen, 2000). Despite this significant impact, 25% and 39% of the diabetic patients, respectively, had no treatment for their pain in two surveys (Daousi et al., 2004; Chan et al., 1990).

Another complication in diabetic neuropathy is the development of foot ulcers, and some reports have estimated that this occurs in approximately 2.5% of patients with diabetes (Lin & Quan, 2010).

Office Visits and Hospital Stays

The distal symmetric sensory or distal sensorimotor polyneuropathy represents the most relevant clinical manifestation, affecting 30% of the hospital-based population and 25% of community-based samples of diabetic patients (Shaw et al., 2003).

Family Caregiving

Patients describe pain-related interference in multiple health related quality of life (HR-QOL) and functional domains, as well as reduced ability to work and reduced mobility due to their pain. The substantial costs to society of DSP derive from direct medical costs, loss of the ability to work, loss of caregivers' ability to work and possibly greater need for institutionalization or other living assistance (Shojana et al., 2004).

Cost

A 1999 survey found that 8% to 9% of Medicare recipients have peripheral neuropathy as their primary or secondary diagnosis. The annual cost to Medicare exceeds $3.5 billion (The Neuropathy Association, 2010)

Opportunity for Improvement

DSP is often difficult to diagnose reliably. It is often misdiagnosed or erroneously associated as the side effect of another disease like kidney failure (The Neuropathy Association, 2010). Undiagnosed and untreated neuropathy may lead to disability and poor quality of life. Neuropathy needs to be diagnosed early to prevent complications, such as neuropathic pain or the diabetic foot.

Since DSP is the major contributory factor for diabetic foot ulcers and the lower-limb amputation rates in diabetic subjects are 15 times higher than in the non-diabetic population, an early detection of DSP by screening and appropriate diagnosis is of utmost importance. (Boulton et al., 2004). This is even more imperative because many patients with DSP are asymptomatic or have only mild symptoms.

Neuropathic pain is often more difficult to treat than many other types of chronic pain. Patients with neuropathic pain have great medical co-morbidity burden than age- and sex-adjusted controls (Shojana et al., 2004). Data collected between 1988 and 1995 (derived from the Centers for Disease Control and Prevention's population-based Behavioral Risk Factor Surveillance System [BRFSS], as well as the National Health and Nutrition Examination [NHANES] surveys) reveal significant quality gaps in the treatment of diabetes and in screening for diabetes-related complications (Lin & Quan, 2010). Diabetics also do not receive appropriate screening measures: only 55% obtain annual foot examinations (Deeb et al., 1988).

Disparities

There is currently no consistent data that shows disparities between minorities and whites for diabetes-related neuropathy and peripheral vascular disease (Carter, Pugh, & Monterrosa, 1996). DSP is more common in older adults. Older people are among the top spenders on healthcare. They make up 13% of the US population in 2002, yet they consumed 63% of health care expenses (Shaw et al., 2003). Improving the effectiveness of diagnosis and optimizing patient outcomes will become increasingly important as the population of the United States ages.

No definite racial predilection has been demonstrated for diabetic neuropathy. However, members of minority groups (e.g., Hispanics, African Americans) have more secondary complications from diabetic neuropathy, such as lower-extremity amputations, than whites (Carter, Pugh, & Monterrosa, 1996; Dorsey et al., 2009). They also have more hospitalizations for neuropathic complications.
Men with type 2 diabetes may develop diabetic polyneuropathy earlier than women, and neuropathic pain causes more morbidity in women than in men (Aaberg et al., 2008).

Evidence for Additional Information Supporting Need for the Measure

Aaberg ML, Burch DM, Hud ZR, Zacharias MP. Gender differences in the onset of diabetic neuropathy. J Diabetes Complications. 2008 Mar-Apr;22(2):83-7. PubMed

American Academy of Neurology (AAN). Distal symmetric polyneuropathy: performance measurement set. St. Paul (MN): American Academy of Neurology (AAN); 2012 May 30. 40 p.

Boulton AJ, Malik RA, Arezzo JC, Sosenko JM. Diabetic somatic neuropathies. Diabetes Care. 2004 Jun;27(6):1458-86. PubMed

Carter JS, Pugh JA, Monterrosa A. Non-insulin-dependent diabetes mellitus in minorities in the United States. Ann Intern Med. 1996 Aug 1;125(3):221-32. PubMed

Chan AW, MacFarlane IA, Bowsher DR, Wells JC, Bessex C, Griffiths K. Chronic pain in patients with diabetes mellitus: comparison with non-diabetic population. Pain Clin. 1990;3:147-59.

Daousi C, MacFarlane IA, Woodward A, Nurmikko TJ, Bundred PE, Benbow SJ. Chronic painful peripheral neuropathy in an urban community: a controlled comparison of people with and without diabetes. Diabet Med. 2004 Sep;21(9):976-82. PubMed

Deeb LC, Pettijohn FP, Shirah JK, Freeman G. Interventions among primary-care practitioners to improve care for preventable complications of diabetes. Diabetes Care. 1988 Mar;11(3):275-80. PubMed

Dorsey RR, Eberhardt MS, Gregg EW, Geiss LS. Control of risk factors among people with diagnosed diabetes, by lower extremity disease status. Prev Chronic Dis. 2009 Oct;6(4):A114. PubMed

Druss BG, Marcus SC, Olfson M, Tanielian T, Elinson L, Pincus HA. Comparing the national economic burden of five chronic conditions. Health Aff (Millwood). 2001 Nov-Dec;20(6):233-41. PubMed

England JD, Asbury AK. Peripheral neuropathy. Lancet. 2004 Jun 26;363(9427):2151-61. [97 references] PubMed

England JD, Gronseth GS, Franklin G, Carter GT, Kinsella LJ, Cohen JA, Asbury AK, Szigeti K, Lupski JR, Latov N, Lewis RA, Low PA, Fisher MA, Herrmann DN, Howard JF Jr, Lauria G, Miller RG, Polydefkis M, Sumner AJ. Practice Parameter: evaluation of distal symmetric polyneuropathy: role of autonomic testing, nerve biopsy, and skin biopsy (an evidence-based review). Neurology. 2009 Jan 13;72(2):177-84. [56 references] PubMed

Galer BS, Gianas A, Jensen MP. Painful diabetic polyneuropathy: epidemiology, pain description, and quality of life. Diabetes Res Clin Pract. 2000 Feb;47(2):123-8. PubMed

Lin HC, Quan D. Diabetic neuropathy. [internet]. [accessed 2010 Dec 16].

Martyn CN, Hughes RA. Epidemiology of peripheral neuropathy. J Neurol Neurosurg Psychiatry. 1997 Apr;62(4):310-8. PubMed

Shaw JE, Zimmet PZ, Gries FA, Ziegler D. Epidemiology of diabetic neuropathy. In: Gries FA, Cameron NE, Low PA. Textbook of diabetic neuropathy. 2003. p. 64-82.

Shojania KG, Ranji SR, Shaw LK, Charo LN, Lai JC, Rushakoff RJ, McDonald KM, Owens DK. Closing the quality gap: a critical analysis of quality improvement strategies. Volume 2: diabetes mellitus care. Technical review 9 (Contract no. 290-02-0017 to the Stanford University-UCSF Evidence-based Practice Center) AHRQ Pub no. 04-0051-2. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Sep. 229 p. [68 references]

Stanton MA. The high concentration of US health care expenditures. Older people are much more likely to be among the top-spending profiles. Vol 19. 2006.

The Neuropathy Association. About peripheral neuropathy: facts. [internet]. [accessed 2010 Dec 17].

Ziegler D. Treatment of diabetic neuropathy and neuropathic pain: how far have we come?. Diabetes Care. 2008 Feb;31 Suppl 2:S255-61. PubMed

Extent of Measure Testing

The measures in the set are being made available without any prior testing. The American Academy of Neurology (AAN) welcomes the opportunity to promote the initial testing of these measures and to ensure that any results available from testing are used to refine the measures before implementation.

Evidence for Extent of Measure Testing

American Academy of Neurology (AAN). Distal symmetric polyneuropathy: performance measurement set. St. Paul (MN): American Academy of Neurology (AAN); 2012 May 30. 40 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Assisted Living Facilities

Home Care

Hospital Outpatient

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All patients age 18 years and older with a diagnosis of distal symmetric polyneuropathy (DSP)

Note: Refer to the original measure documentation for International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes and Current Procedural Terminology (CPT) Evaluation and Management (E/M) service codes.

Exclusions
Unspecified

Exceptions
Documentation of a medical reason(s) for not reviewing and documenting neuropathic symptoms and signs (e.g., patient has profound mental retardation, patient has a language disturbance, or patient is cognitively impaired)

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Patients who had their neuropathic symptoms and signs reviewed and documented at the initial evaluation for distal symmetric polyneuropathy (DSP)

Note:

Neuropathic Symptoms: Numbness, altered sensation, or pain in the feet.

Neuropathic Signs: Decreased or absent ankle reflexes, decreased distal sensation, and distal muscle weakness or atrophy. Refer to the original measure documentation for reporting instructions.

Exclusions

Unspecified

Numerator Search Strategy

Encounter

Data Source

Administrative clinical data

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Measure #1: distal symmetric polyneuropathy (DSP) diagnosis criteria: DSP symptoms and signs.

Measure Collection Name

Distal Symmetric Polyneuropathy Quality Measurement Set

Submitter

American Academy of Neurology - Medical Specialty Society

Developer

American Academy of Neurology - Medical Specialty Society

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

Work Group Members Distal Symmetric Polyneuropathy

Co-Chairs: John D. England, MD, FAAN; Gary M. Franklin, MD, MPH, FAAN

Quality Measurement and Reporting Subcommittee Facilitator: Richard M. Dubinsky, MD, MS

American Academy of Neurology: Gil Wolfe, MD; William David, MD; Jeffrey Cohen, MD; Jonathan Goldstein, MD; Victoria Lawson, MD; Amanda Peltier, MD; Benn Smith, MD; Mazen Dimachkie, MD

American Diabetes Association: Susan Kirkman, MD

The Neuropathy Association: Thomas Brannagan, MD; Natacha T. Pires, MBBS

American Academy of Physical Medicine and Rehabilitation: Stephen Kishner, MD

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Methodologist: Rebecca Kresowik

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2012 May

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

Measure Availability

Source available from the American Academy of Neurology (AAN) Web site .

For more information, contact AAN at 201 Chicago Avenue, Minneapolis, MN 55415; Phone: 800-879-1960; Fax: 612-454-2746; Web site: www.aan.com .

NQMC Status

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Production

Source(s)

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